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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,896	08/25/2000	Jeffrey J. Gold	PD-200223	6089

7590 02/02/2004

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EXAMINER

STEVENS, THOMAS H

ART UNIT	PAPER NUMBER
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2123

6

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/645,896

Applicant(s)

GOLD, JEFFREY J.

Examiner

Thomas H. Stevens

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 25 August 2000.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-15 have been presented for examination.

Response to Amendments

2. The applicants are thanked for correcting the oath (pg. 3, paragraph 2) and the abstract (pg. 3, paragraph 3).

Response to Arguments-Objections

3. The objection to the drawings is withdrawn in view of applicant's argument.
4. Applicants are thanked for their arguments with respect to figures in claims 3 and 4, which states a common IP address of simulated ground stations. The examiner retracts this objection, because it is an inherent feature of the device.
5. The examiner thanks the applicants for clarifying that the AD RTS is the simulation system.
6. The applicants are thanked for clarifying claims 8 and 13 about "where or who's is coupling the spacecraft status and control client".

Response to Arguments-103 Rejections (pgs. 4-5)

7. Regarding applicant's response to 35 U.S.C. 103(a) rejections: Applicant's arguments filed 4 December 2003 have been fully considered but they are not persuasive.

8. The applicant states that Zammit does not disclose any teaching or mention of ranging simulation. Zammit teaches ranging as part of Ground Station Mixed Simulation Test System (GSMASST) capabilities (page 446, column 1, paragraph 5). However, since applicant defines ranging as " an actual application by two or more ground stations that are used to improve the determination of the position of the position of the spacecraft " (pg. 5, line 20), it is therefore concluded that Zammit teaches ranging simulation.

9. The applicant states that there was no teaching or suggestion of range data generator and range server for claim 13. Based on Zammit teachings of ranging (page 446, column 1, paragraph 5) and applicant's admission regarding the definition of (pg. 4, paragraph 4) what ranging is, the range data and range server capabilities are inherent features. The rejection stands.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-15 are rejected under 35 U.S.C.103 (a) as being unpatentable over CSC (February 2000) in view of Zammit (1997). Computer Science Corporation (CSC) teaches several Internet protocols, which allow ground control operators to communicate to their airborne platforms and to each other. This concept is called the Operating Missions as Nodes on the Internet (OMNI). OMNI is an experimental Internet-based commercial off-the-shelf (COTS) hardware and software configuration to supplement a wide area network for multiple ground station operators ability to communicate among each other and their multiple platforms: airborne (e.g., satellites, planes, balloons), shipborne (commercial, military) or land-based (field sites, tracking stations). The bulk of the experiment is centered on the design of Internet Protocols (IPs). Each IP is assigned to a platform such that each protocol layer delivers packets between any network source and destination (CSC briefing slide 12). These IPs were confined to transmission lines. Now scientist are experimenting encompassing IPs to the RF signal so as to provide multiple operators access to any airborne platform via the Internet. The goal of the OMNI prototype is to demonstrate IP's operations use over space links. (CSC briefing slide 12). Simulation of apparatus was done in the laboratory and soon after on a ship over the Black Sea on Augusts 11, 1999. The entire network spread sheet is disclosed on page 13 of CSC's briefing slide. However, CSC does not detail any simulation or experimentation of the day-to-day operations of the airborne platforms themselves whereas Zammit does.

Zammit teaches a case history of hardware-in-the-loop air-to-ground simulation for their HSC family of geosynchronous communications satellites. The HS601 is the attitude determination and control subsystem (ADCS), which comprises of sensors, control actuators, and microprocessor hardware and software; all required to control vehicle attitude during all phases of the mission. The ADCS supports antenna deployment, solar wing positioning, autonomous spacecraft management and failure detection and response functions that allow the spacecraft to maintain service with minimal ground control activity. One major component part includes the redundant spacecraft control processors (SCP). This processor is part to the ADCS development process by which the SCP breadboard hardware supports the mixed simulation test (MST).

The MST system is capable of operating with either breadboard or flight SCP units to simulate all mission phases, such as hardware and software; to generate all ADCS commands and process all SCP generated telemetry; all interfacing for command telemetry, sensors, actuators, thrusters, and power designated to emulate the spacecraft interfaces; access to all signal I/O for SCP and internal software variables and constants at Zammit: pg. 443, column 1, 3rd paragraph; pg. 444-445, columns 2 and 1 respectively.

Both systems have the equivalent objective of optimizing communications between airborne platforms and ground controls but utilize each other technology differently. Zammit's teaching of real time simulation of the day-to-day satellite operations differs from CSC's teaching of integrating multiple ground station operations

to their airborne counterparts via the Internet. Both encompass the same goal of optimizing point-to-point communications.

One of ordinary skill-level in the art at the time of invention would have modified the teachings of CSC with Zammit, since it would have been obvious to integrate a local area or wide area network that would support the day-to-day operations of multiple ground tracking stations. Although Zammit discloses his simulation as being performed by one operator, CSC elevates it a step further by adding IPs to the modulated signal thus providing instant link between the airborne system and the *multiple* ground station operators via the Internet. Zammit's satellite emulator/simulator integrated with CSC's OMNI program provides the requirement for experimentation of multiple ground control operator's ability to communicate to their colleagues and airborne platforms.

Conclusion

12.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

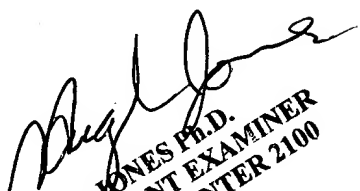
Correspondence Information

14. Any inquiry concerning this communication or earlier communications from the
(3- examiner should be directed to Tom Stevens whose telephone number is (703) 305-0365, Monday-Friday (8:30 am- 5:30 pm) or contact Supervisor Mr. Kevin Teska at (703) 305-9704. The fax number for the group is 703-872-9306.

Any inquires of general nature or relating to the status of this application should be directed to the Group receptionist whose phone number is (703) 305-3900.

January 29, 2004

THS


HUGH JONES Ph.D.
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